CLAIMS

What is claimed is:

1. A method of treatment for a mammal in, or at risk of, chronic renal failure comprising

administering to said mammal a therapeutically effective amount of an OP/BMP renal therapeutic agent.

2. A method of treatment to delay the need for, or reduce the frequency of, chronic dialysis treatments comprising

administering to a mammal a therapeutically effective amount of an OP/BMP renal therapeutic agent.

3. A method as in claim 1 wherein said renal therapeutic agent comprises a polypeptide consisting of at least a C-terminal cysteine domain of a protein selected from the group consisting of a pro form, a mature form, and a soluble form of a polypeptide selected from the group consisting of OP-1, OP-2, OP-3, BMP2, BMP3, BMP4, BMP5, BMP6, and BMP9.

4. A method as in claim 3 wherein said renal therapeutic agent comprises a polypeptide consisting of at least a C-terminal cysteine domain of a protein selected from the group consisting of a pro form, a mature form, and a soluble form of human OP-1.

5. A method as in claim 1 wherein said renal therapeutic agent comprises a polypeptide having at least 70% homology with an amino acid sequence of a C-terminal seven-cysteine domain of human OP-1.

6. A method as in claim 5 wherein said polypeptide has at least 75% homology with an amino acid sequence of a C-terminal seven-cysteine domain of human OP-1.

7. A method as in claim 5 wherein said polypeptide has at least 80% homology with an amino acid sequence of a C-terminal seven-cysteine domain of human OP-1.

8. A method as in claim 5 wherein said polypeptide has at least 60% identity with an amino acid sequence of a C-terminal seven-cysteine domain of human OP-1.

9. A method as in claim 5 wherein said polypeptide has at least 65% identity with an amino acid sequence of a C-terminal seven-cysteine domain of human OP-1.

10. A method as in claim 5 wherein said polypeptide has at least 70% identity with an amino acid sequence of a C-terminal seven-cysteine domain of human OP-1.

11. A method as in any one of claims 3-10 wherein said renal therapeutic agent

(a) induces chondrogenesis in an ectopic bone assay;

(b) prevents, inhibits, delays or alleviates loss of renal function in an animal model of chronic renal failure; or

(c) causes a clinically significant improvement in a standard marker of renal function when administered to a mammal in, or at risk of, chronic renal failure.

12. A method as in claim 1 wherein said renal therapeutic agent is selected from the group consisting of human osteogenic proteins and human bone morphogenetic proteins.

13. A method as in any one of claims 1-12 wherein

said mammal is afflicted with a condition selected from the group consisting of chronic renal failure, end-stage renal disease, chronic diabetic nephropathy, diabetic glomerulopathy, diabetic renal hypertrophy, hypertensive

nephrosclerosis, hypertensive glomerulosclerosis, chronic glomerulonephritis, hereditary nephritis, and renal dysplasia.

14. A method as in any one of claims 1-12 wherein

examination of a renal biopsy of said mammal indicates that said mammal is afflicted with a condition selected from the group consisting of glomerular hypertrophy, tubular hypertrophy, glomerulosclerosis, and tubulointerstitial sclerosis.

15. A method as in any one of claims 1-12 wherein

examination of said mammal indicates renal fibrosis.

16. A method as in claim 15 wherein

said examination is an ultrasound, MRI or CAT scan of said mammal.

17. A method as in any one of claims 1-12 wherein

said mammal possesses a number of functional nephron units which is less than about 50% of a number of functional nephron units present in a mammal having intact healthy kidneys.

18. A method as in any one of claims 1-12 wherein

said mammal possesses a number of functional nephron units which is less than about 40% of a number of functional nephron units present in a mammal having intact healthy kidneys.

19. A method as in any one of claims 1-12 wherein

said mammal possesses a number of functional nephron units which is less than about 30% of a number of functional nephron units present in a mammal having intact healthy kidneys.

20. A method as in any one of claims 1-12 wherein

said mammal possesses a number of functional nephron units which is less than about 20% of a number of functional nephron units present in a mammal having intact healthy kidneys.

21. A method as in any one of claims 1-12 wherein said mammal is a kidney transplant recipient.

22. A method as in any one of claims 1-12 wherein said mammal possesses only one kidney.

23. A method as in any one of claims 1-12 wherein examination of a urinary sediment of said mammal indicates a presence of broad casts.

24. A method as in any one of claims 1-12 wherein said mammal has a GFR which is chronically less than about 50% of a GFR_{exp} for said mammal.

25. A method as in claim 24 wherein said mammal has a GFR which is chronically less than about 40% of a GFR_{exp} for said mammal.

26. A method as in claim 24 wherein said mammal has a GFR which is chronically less than about 30% of a GFR_{exp} for said mammal.

27. A method as in claim 24 wherein said mammal has a GFR which is chronically less than about 20% of a GFR_{exp} for said mammal.

28. A method as in any one of claims 1-12 wherein said mammal is a human male weighing at least about 50 kg and has a GFR which is chronically less than about 50 ml/min.

29. A method as in claim 28 wherein said mammal is a human male weighing at least about 50 kg and has a GFR which is chronically less than about 40 ml/min.

30. A method as in claim 28 wherein said mammal is a human male weighing at least about 50 kg and has a GFR which is chronically less than about 30 ml/min.

31. A method as in claim 28 wherein said mammal is a human male weighing at least about 50 kg and has a GFR which is chronically less than about 20 ml/min.

32. A method as in any one of claims 1-12 wherein said mammal is a human female weighing at least about 40 kg and has a GFR which is chronically less than about 40 ml/min.

33. A method as in claim 32 wherein said mammal is a human female weighing at least about 40 kg and has a GFR which is chronically less than about 30 ml/min.

34. A method as in claim 32 wherein said mammal is a human female weighing at least about 40 kg and has a GFR which is chronically less than about 20 ml/min.

35. A method as in claim 32 wherein said mammal is a human female weighing at least about 40 kg and has a GFR which is chronically less than about 10 ml/min.

36. A method as in any one of claims 1-12 wherein said treatment reduces serum creatinine levels in said mammal by at least about 5% over 3 months.

37. A method as in any one of claims 1-12 wherein

prior to said treatment said mammal presented a chronic decline in a clinical indicator of renal function; and

after at least about 3 months of said treatment, said indicator stabilizes.

38. A method as in any one of claims 1-12 wherein said administration is oral.

39. A method as in any one of claims 1-12 wherein said administration is parenteral.

40. A method as in claim 39 wherein said administration is intravenous.

41. A method as in claim 39 wherein said administration is intraperitoneal.

42. A method as in claim 39 wherein said administration is into the renal capsule.

43. A method as in claim 39 wherein a stent has been implanted into said mammal for said administration.

44. A method as in claim 43 wherein said stent is an intravenous stent.

45. A method as in claim 43 wherein said stent is an intraperitoneal stent.

46. A method as in claim 43 wherein said stent is a renal intracapsular stent.

47. A method as in claim 39 wherein said administration is by an implanted device.

48. A method as in any one of claims 1-12 wherein said administration is at least once a week for a period of at least about one month.

49. A method as in any one of claims 1-12 wherein said administration is at least once a month for a period of at least about one year.

50. A method as in any one of claims 1-12 wherein said renal therapeutic agent is administered at a dosage of about 0.01-1200 μg/kg body weight of said mammal.

51. A method as in claim 50 wherein said renal therapeutic agent is administered at a dosage of about 10-300 μg/kg body weight of said mammal.

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